

**FIELD SAMPLING PLAN ADDENDUM**

**AMERICAN CHEMICAL SERVICE SUPERFUND SITE  
GRIFFITH, INDIANA**

**PROJECT NO. 1252042**

**Prepared for:  
ACS RD/RA Executive Committee**

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## TABLE OF CONTENTS

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
1.0 SUMMARY OF SAMPLING ACTIVITIES.....	1
1.1 Site Background.....	1
2.0 SAMPLING NETWORK DESIGN AND RATIONALE .....	3
3.0 SAMPLE CUSTODY PROCEDURE .....	4
4.0 SAMPLE CONTAINERS, SAMPLE PRESERVATION, AND MAXIMUM HOLD TIMES .....	5
5.0 SAMPLE HANDLING, PACKAGING, AND SHIPMENT.....	6
6.0 DECONTAMINATION PROCEDURES.....	7
7.0 SAMPLING EQUIPMENT AND PROCEDURES.....	8
7.1 General Sampling Procedures .....	8
8.0 QUALITY CONTROL SAMPLE PROCEDURES .....	9
9.0 PREVENTATIVE MAINTENANCE PROCEDURE/SCHEDULE.....	10
10.0 SAMPLE DISPOSAL.....	11

## TABLES

Table 2-1 Sampling and Analysis Program

## APPENDICES

Appendix A Air Permit Equivalency

## 1.0 SUMMARY OF SAMPLING ACTIVITIES

The field activity associated with the Remedial Design/Remedial Action (RD/RA) in this Field Sampling Plan (FSP) Addendum for the American Chemical Service, Inc. (ACS) NPL Site located in Griffith, Indiana (Site) includes collection of off-gas from the *in-situ* soil vapor extraction (ISVE) system. Two air samples from the ISVE system off-gas, one prior to catalytic oxidation and one prior to discharge, will be collected in accordance with the Indiana Department of Environmental Management (IDEM) Permit Equivalency outlined in Appendix A. This FSP Addendum should be used in conjunction with the Quality Assurance Project Plan (QAPP) and FSP dated April 1999.

### 1.1 Site Background

The Site began operations in 1955, with reclamation of spent solvent waste. The Site accepted solvent mixtures containing alcohols, ketones, esters, chlorinateds, aromatics, aliphatics, and glycols that contained various residues. Other processes that have operated at the site since 1955 include specialty chemical manufacturing in small batches, burning of still bottoms and non-reclaimable materials in incinerators (1965-1970), epoxidation and bromination operations, and storage and blending of waste streams for ACS's secondary fuel program.

The approximate area of drum storage was a 250-foot by 450-foot parcel, located in the northern third of the fenced ACS facility. The drum storage area was visible in a 1970 aerial photograph. However, an aerial photograph from 1973 indicates that the area was clear with no sign of drums on the ground surface. Approximately 400 drums containing sludge and semi-solids of unknown types were reportedly disposed of inside the plant (this area was named the "On-Site Containment Area").

From 1988 to 1992, a Remedial Investigation/Feasibility Study (RI/FS) was conducted at the Site. In 1992, a ROD was executed which described the remedial action to be implemented on the site. During the RI, a test pit was excavated in the On-Site Containment Area, where drums were thought to be buried. Drums were found to be buried on their sides, stacked 3-high and closely packed together. Various liquids were observed in soil surrounding some of the drums, such as brownish water, and an oil-like liquid. In addition, a viscous blue liquid was observed leaking from several drums. The majority of the drums were noted to be dented and corroded, but largely intact. Construction activities conducted during installation of the Perimeter Groundwater Containment System (PGCS) and Barrier Wall Extraction System (BWES) verified the presence of buried drums stacked 3-high in the On-Site Containment Area. A geophysical investigation was subsequently conducted in February 1998 to determine the extent of the buried drums in the On-Site Containment Area. Based on past RI results, recent construction activities, and the 1998 geophysical investigation, two areas of buried drums were identified.

The Still Bottoms Pond Area, located in the central portion of the ACS facility, served as a repository for still bottoms waste from the solvent recycling process. This area contained a pond and "treatment lagoon" where still bottoms were disposed. The pond and lagoon have since been filled in with drum carcasses, rubble, soil, and other debris. During the RI, many borings were advanced in this area, and the concentrations of contaminants in the area indicate that it is a significant source area on Site.

The wetlands to the west of the ACS facility were preliminarily sampled during the RI and then investigated in 1996 to determine the extent of impact from facility operation on the wetlands. Analytical samples collected during this investigation indicated that certain localized sediments in the wetlands area were contaminated with polychlorinated biphenyls (PCBs). These PCBs likely were transported from the facility via surface water runoff from the facility which drained into this wetlands area.

The Off-Site Area of the Site is located south of the ACS facility railroad tracks and encompasses the Off-Site Containment Area and the Kapica-Pazmey building area. A large portion of the Off-Site Area is essentially a continuation of the Town of Griffith landfill. During the RI, installation of soil borings indicated contaminated areas in the central and southern portions of the Off-Site Area. The barrier wall construction, because it required excavation of several hundred feet at the perimeter of the Off-Site Area, verified the landfilled nature of the area. During the Material Handling/LTTT Study, a portion of the central Off-Site Area was found to contain many deteriorated drum carcasses and parts. This area is also a significant source area on Site.

In February 1997, as part of the expedited interim remedial measures, a groundwater pump and treatment system was installed in the wetland area. The pumping system, referred to as the PGCS, provides containment for a groundwater plume in the northwest portion of the Site. In addition, a groundwater treatment system, including phase separation, UV/oxidation, precipitation, filtration, air stripping, and carbon adsorption, was constructed to treat groundwater from the PGCS.

In 1997, a continuous barrier wall was installed around the On-Site Containment Area, the ACS operating facility, the Off-Site Containment Area and the Kapica-Pazmey Area. The barrier wall encloses the known source areas at the Site. A groundwater extraction system inside the barrier wall, comprised of eight 100-foot long extraction trenches, was installed to maintain a hydraulic capture zone within the barrier wall, and is referred to as the BWES. Groundwater from the BWES is also treated in the groundwater treatment system.

The PGCS has been operated since March of 1997, and the BWES was started-up in May 1997. Groundwater from these systems continues to be treated through the groundwater treatment system. Based on the performance data collected to date, these interim systems have successfully, isolated the source areas of the Site thus preventing further off-site groundwater contamination from occurring and providing active treatment of groundwater from within the barrier wall (BWES) and in the northeast portion outside the barrier wall (PGCS).

## **2.0 SAMPLING NETWORK DESIGN AND RATIONALE**

ISVE treatment system inlet air and off-gas air samples will be collected during system operation to verify system air effluent meets the IDEM air permit equivalency outlined in Appendix A. The off-gas will be sampled prior to treatment by the catalytic oxidation units and immediately prior to discharge. Off-gas samples will be collected using summa canisters and will be analyzed for volatile organic compounds (VOCs) by Method TO-14 (Table 3-1A of the May 1999 QAPP). The number of samples to be collected, frequency of collection, and quality assurance/quality control (QA/QC) samples are summarized in Table 2-1 of this FSP Addendum. A description of air sampling procedures is included as Section 7.0 of this FSP Addendum.

### **3.0 SAMPLE CUSTODY PROCEDURE**

Sample custody procedures are found in Section 3.0 of the May 1999 FSP.

#### **4.0 SAMPLE CONTAINERS, SAMPLE PRESERVATION, AND MAXIMUM HOLD TIMES**

The sample container requirements, preservation, and hold times may be found in Table 1-2 of the May 1999 QAPP.

## 5.0 SAMPLE HANDLING, PACKAGING, AND SHIPMENT

ISVE treatment system off-gas samples will be packaged and shipped to the laboratory on the day they are collected using the following procedures:

- A completed sample tag will be attached with a wire to each Summa canister for each performance or quality control sample. All entries will be made using indelible ink. Any errors will be corrected by drawing a single line through the incorrect entry, entering the correct information, and then initialing and dating the change. The tag will include the field sample number, location (if not encoded in the sample ID), date and time of sample collection, and type of analysis. There will also be a space available for entry of the lab sample ID number.
- The Summa canisters will be placed in their original shipping container.
- The original copy of the completed chain of custody (COC) form will be placed in a waterproof plastic bag and taped to the inside of the Summa canister containers.
- The Summa canister containers will be secured by wrapping strapping tape completely around the containers in two locations.
- "This Side Up" labels will be placed on two sides of the containers.
- Custody seals will be placed in two locations (the front right and back left of the cooler) across the container closures to ensure that potential container tampering is detected. The date and initials of the sampler will be written on the custody seal.
- A copy of the COC record and the signed air bill be retained for the project files.



## **6.0 DECONTAMINATION PROCEDURES**

Decontamination procedures may be found in Section 6.0 of the May 1999 FSP.

## **7.0 SAMPLING EQUIPMENT AND PROCEDURES**

Samples will be collected from leak-tight connections immediately upstream and downstream of the catalytic oxidation unit. See the May 1999 QAPP Table 1-2 for sample containers, preservatives and methods for filling bottles.

### **7.1 GENERAL SAMPLING PROCEDURES**

Samples will be collected into a laboratory-supplied evacuated summa canister. Sampling tubing will be designed for handling high temperature air. Care must be taken to choose tubing that will not adsorb or desorb contaminants to its walls and is suitable for sampling under a vacuum. Acceptable tubing material includes silicon and Tygon™. Summa canisters will be pre-evacuated and therefore are under vacuum, and will not require a pump.

The required sampling equipment will include the following:

- Summa canisters
- Silicon or Tygon™ tubing
- Watch or clock with a second hand
- Field record forms, including COC forms, and sample labels
- Field logbook

The summa canister will be connected to the sample tap inlet tubing. The canister valve will be preset by the laboratory to collect a sample over a 120-minute period. The valve will be opened, time recorded, and sample collected. At the end of 120 minutes (or once the summa canister pressure reaches atmospheric) the valve will be closed. The summa canister will be labeled and readied for shipping.

## **8.0 QUALITY CONTROL SAMPLE PROCEDURES**

Quality control sample procedures may be found in Section 8.0 of the May 1999 FSP.

## **9.0 PREVENTATIVE MAINTENANCE PROCEDURE/SCHEDULE**

As part of their QA/QC Programs, a routine preventative maintenance program is conducted by the off-gas sample analytical laboratory to minimize the occurrence of instrument failure and other system malfunctions. These laboratories have an internal group to perform routine scheduled maintenance, and to repair or coordinate with the vendor for the repair of all instruments. All laboratory instruments are maintained in accordance with manufacturer's specifications and the requirements of the specific method employed. This maintenance is carried out on a regular, scheduled basis, and is documented in the laboratory instrument service logbook for each instrument. Emergency repair or scheduled manufacture's maintenance is provided under a repair and maintenance contract with factory representatives.

Table 11-1 of the May 1999 QAPP provides a summary of preventative maintenance for laboratory equipment.

## 10.0 SAMPLE DISPOSAL

The analytical laboratory will dispose of samples remaining following analysis in an approved manner.

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**TABLE 2-1**  
**Sampling and Analysis Program**  
**ISVE Treatment System Monitoring**  
**American Chemical Service, Inc.**  
**Griffith, Indiana**

<u>Matrix</u>	<u>Frequency</u>	<u>Laboratory</u>	<u>No of Samples</u>	<u>Field Duplicates</u>	<u>Ambient Air Blanks</u>	<u>Total # Samples</u>	<u>Laboratory Parameters</u>
ISVE TREATMENT SYSTEM OFF-GAS	(a)	Compuchem	2	1	1	4	VOCs (b)

General Notes:

1. Lab Address and Telephone Number:

Compuchem  
501 Madison Avenue  
Cary, North Carolina 27513  
(919) 379-4014

2. One sample each will be taken from the ISVE system prior to treatment by the catalytic oxidation units and immediately prior to discharge.

3. Field duplicates will be collected at a ratio of 1 field duplicate for each sampling event. Ambient air blanks will be collected at a ratio of 1 ambient air blank for each sampling event.

4. Refer to Table 3-1A of the May 1999 QAPP for the parameter list and required quantitation limits and Table 7-1 of the May 1999 QAPP for a summary of methods.

5. Sample bottles provided by the laboratory will meet requirements stated in "Specifications and Guidance for Contaminant Free Sample Containers" (EPA 540/R-93-051).

Footnotes:

(a) System off-gas samples will be collected in accordance with the Air Permit Equivalency in Appendix A.

(b) VOCs analyzed will be the TO-14 list.